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DIRECTOR OF CENTRAL INTELLIGENCE

Intelligence Information Handling Committee

IHC/MM 79-28
23 October 1979

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MEMORANDUM FOR: Mr. Bruce T. Johnson
CIA/IHC Principal Member

STATINTL [redacted]
NSA/IHC Principal Member

STATINTL [redacted]
DIA/IHC Principal Member

STATINTL FROM: [redacted]
Chairman, DCI Intelligence Information Handling Committee

SUBJECT: CIA Proposal to Provide a Centralized Bibliographic Indexing and Document Storage and Retrieval System

1. I would like to propose that the members of the IHC ADP Subcommittee meet on 2 November 1979 at the Community Headquarters Building, Room 1S06, from 1300 to approximately 1530 hours to review the status of the study to evaluate the CIA proposal to provide and manage a centralized bibliographic indexing and document storage and retrieval system for the Community.

STATINTL 2. [redacted] will provide a status report and his findings, conclusions and recommendations at that time. The meeting will give us an opportunity to evaluate and critique the results of the study thus far prior to presentation to the IHC at the 8 November meeting. Your views and suggestions would be greatly appreciated.

[redacted] STATINTL

PRELIMINARY CONCLUSIONS FOR THE STUDY OF COMMUNITY BIBLIOGRAPHIC SERVICES (U)

15 October 1979

COMMUNITY BIBLIOGRAPHIC SERVICES

BACKGROUND

1. (S) The June 1979 report of the Analyst Support Task Force which was sponsored by the DCI's Intelligence Information Handling Community (IHC) concluded that "a community-wide, on-line, multi-source bibliographic index to Intelligence Community documents should be created and made available either directly or through an information systems specialist" to the intelligence community's production analysts. The task force report also indicated that varying intra-agency distribution policies and procedures prevent analysts in one agency from having access to the same source materials that their colleagues in the other agencies see and use. Analysts feel they are not getting access to all intelligence source materials required to provide assessments in assigned areas of responsibility. Such practices impede the coordination process and may result in uninformed analysis.

2. (U) In response to the analyst support study, CIA has submitted a proposal to the IHC to make its all-source bibliographic reference file (RECON) available to the community as a centralized intelligence community reference system that would be centrally managed and operated for the community by CIA. The RECON system currently provides on-line access to bibliographic references from all intelligence sources and on all subjects of intelligence interest to CIA analysts in the Langley headquarters building, NPIC, and the NITC. The classification of the materials referenced ranges from UNCLASSIFIED to TOP SECRET SI/TK/G.

3. (U) In addition to its RECON bibliographic service, CIA offered its automated document storage and retrieval (ADSTAR) system as a centralized community document storage and retrieval system. ADSTAR is part of CIA's SAFE project. CIA proposed three options for the community use of the RECON bibliographic reference system and two options for the ADSTAR document storage and retrieval service which together over a 5 year period would range in cost from $6.05 million to $12.18 million. 1/

1/ The [illegible] wide-band communications of microfilm stored source documents.

An additional 33 to 35 positions would be required to support this effort under CIA's proposal, but the job functions to be performed by these people would vary depending on the options chosen. CIA's options for bibliographic services were: (1) Increased off-line service to the community with requests mailed to CIA for action, (2) Direct on-line service to the RECON computer by non-CIA NFIP analysts, and (3) on-line service through a CIA intermediary. CIA proposed services for automatic document storage and retrieval were: (1) off-line service requested by mail, or (2) direct on-line service to CIA's ADSTAR system by non-CIA NFIP analysts. 2/

CURRENT STUDY

4. (S) An IHC-sponsored Bibliographic Study Group is nearing completion of its analysis of CIA's proposed services. This group studied the feasibility of the CIA proposal by comparing the capabilities of 6 of the 30 identified bibliographic systems currently maintained in the community. The study included an analysis of a bibliographic system at the Department of State. The group's initial findings are as follows:

- A direct comparison of sources maintained by the various agencies in automated form indicates that RECON contains more references to more intelligence sources than does any other automated bibliographic system evaluated in this study; however, it contains references to only 50% of all intelligence sources maintained by the DIA, NSA, NPIC, and State Department. The most notable shortfalls were in U.S. SIGINT field reports, State Cables, and Open Source Literature.

- RECON's automated index record and coding scheme is similar to that used by DIA in its three major bibliographic files, but NPIC's EPF, NSA's SOLIS, and the AF CIRC II systems have all moved towards a version of full text retrieval of entire documents (disseminated electrically) or abstracts of larger documents. Such full text systems provide a high degree of analyst's direct interaction through the use of an English-like retrieval language. Currently, many of the community bibliographic systems (including RECON) make the user translate his requests into abbreviated numerical codes primarily designed for the computer.

- RECON maintains references on more restricted intelligence source documents (namely ORCON and

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2/ As noted earlier, this option did not include costs for secure communications of classified source documents.

GAMMA) than any other system; however, most of the other agencies maintain some of this material in their automated systems. Under CIA's RECON proposal, many of these restricted materials would not be made available to non-CIA NFIP users. In 1979 these restricted materials amounted to approximately 23% of the RECON data base and this figure was growing at the rate of approximately 6% per year based on the study team's trend analysis for the past 2-1/2 years.

- The RECON updating process is much like that used by DIA, State, and NPIC (i.e., very labor intensive). The NSA SOLIS and Air Force CIRC II systems have partially automated the indexing and data reduction processes required to maintain their bibliographic systems. The codes used and the structure of the data bases at DIA are similar to RECON.

- Direct on-line access to the RECON data base is currently restricted to CIA analysts in the Langley Headquarters building, NPIC, and the NITC. As a base of comparison, the locations of all other terminals served by the evaluated bibliographic system at DIA, NSA, NPIC, State, and the Air Force were counted to determine the number of additional terminals a centralized RECON would provide. Over 375 terminals would have to be added to the system unless it was linked through the COINS network. Using the COINS network (as proposed by CIA under option b), less than 100 terminals would need to be added in order to provide equivalent access to RECON. If direct access via COINS were initially limited to users in the central reference groups of each agency, less than 20 additional terminals would have to be added.

- While direct on-line access to the RECON data base is currently limited to CIA analysts, several agencies currently make use of the data base and have expressed interest in obtaining direct on-line access to it. For the past several years CIA management has placed severe limits on other agency access to the RECON system because of substantial reductions imposed on CIA resources. However, the bibliographic references to finished intelligence products from RECON have been transported to NSA and loaded on the NSA COINS host

computer to provide partial RECON access by the community's production analysts. This subset of the RECON data base available through COINS was queried by non-CIA NFIP analysts over 1,200 times in 1978 and over 1,900 times during the first six months of 1979. Over 1,600 off-line requests for searches to the full RECON data base were made by non-CIA NFIP agencies in 1978. In 1974 the assistant Secretary of Defense for Intelligence (ASD/1) sponsored a study of the Community On-Line Intelligence System (COINS) which recommended that CIA's RECON/AEGIS bibliographic index be made accessible throughout the community via the COINS network. This recommendation was never implemented. The non-CIA NFIB use of RECON has been growing over the years. This indicates the continued community interest in accessing the RECON data base.

- CIA's proposed option for indirect electronic bibliographic services through an intermediary (CIA option 3c) was deemed infeasible since nearly $1 million would have to be spent for hardware procurement or software services and an additional 15 area specialists would be required to receive and handle requests from analysts outside CIA. Technically this option would be very risky because the capability to provide such a service does not currently exist. In addition, this proposed option did not call for an electronically isolated processor. Apparently the smart terminals identified by CIA in its proposal would provide the electronic isolation CIA requires under option 3b. It seems doubtful that state-of-the-art in smart terminals has advanced to the degree that they could provide such a service.

5. (U) Congress has repeatedly questioned the overall direction and planning of ADP in the intelligence community. From reviews of the SAFE requirements documentations and during discussions with the joint CIA/DIA SAFE project managers concerning the role of bibliographic support (namely RECON) in the SAFE project, it was evident that CIA SAFE plans to include an enhanced version of RECON in mid-1983; however, current SAFE milestones do not call for the enhanced RECON SAFE to be shared either with DIA or the rest of the intelligence community. The project managers were aware that CIA had proposed to make RECON available to the community. Both project managers agreed that if the CIA proposal were adopted numerous technical, political, administrative, and policy

problems that could hamper progress on the SAFE project would be solved or at least initially addressed, particularly if the CIA SAFE bibliographic index should be made accessible outside CIA. They looked upon the effort as an investment which would provide benefits to the SAFE project.

PROBLEMS

6. (U) CIA's current RECON proposal is a means for providing a larger segment of the intelligence community with common access to a broad section of intelligence community source documents. The RECON system by itself will not provide references to 100% of the source documents, but it could provide an interim solution to what has been analyzed as a significant problem within the community. The major problem is that the intelligence community lacks a long-range plan for its bibliographic services. Parts of the problem are being addressed through major projects such as SAFE, SOLIS, WEEDER, PROJECTOR, and COINS, but very little overall coordination and direction have been applied to this effort.

7. (C) Distributed Bibliographic Responsibilities. Current RECON processes and procedures are too labor-intensive to be used as a totally centralized bibliographic reference and document storage and retrieval system for the community. Based on the bibliographic study group's analysis, 60 to 75 additional people would have to be added to the CIA staff to provide centralized community services. While much of the manpower for such an effort could be drawn from other agencies (assuming that their bibliographic systems would be eliminated), this does not seem to be a feasible alternative for either political or technical reasons. Technically, other bibliographic systems currently used in the community are much more widely available, use English-like text to provide more analyst interaction, and are less labor-intensive to maintain. The disadvantage to these systems is that they require much more of an investment in hardware and software. Such an investment would likely be in the neighborhood of $20 million and require at least 25 additional personnel. The most feasible solution to the bibliographic problem would appear to be one of delegated responsibility for data base maintenance and standardized practices across the community. Such an approach envisions that intelligence source document originators would not only be responsible for the development of source materials, but also for the timely and accurate maintenance of their assigned portions of the "community's bibliographic data bank." Under such an approach, NSA's SOLIS system could provide community-wide references to SIGINT materials, the Air Force CIRC II system could provide references to open source S&T information, and RECON/SAFE could provide references to both CIA and DoD IIRs and finished intelligence products. State cables could be

provided either through NSA's project WEEDER or through CIA/DIA SAFE. The most feasible alternative for providing community-wide access to such systems would appear to be the COINS network.

8. (S) Assuming that this is the basis for a long range plan to provide community bibliographic services, several security and policy issues must be addressed. The bibliographic study group noted that CIA's current RECON has more GAMMA and ORCON material than does any other system (the NSA SOLIS system contains no GAMMA material). Under its proposal, CIA feels that it can isolate the GAMMA and ORCON materials into files within the RECON data base and restrict access to such material through the use of software and hardware access controls. Those CIA management personnel that developed the proposal quickly note that computer security experts at CIA would have to grant final approval for such an approach. Based on the following facts, it would seem that a direct on-line access to the RECON data base could be achieved with a minimum security risk:

- CIA insists that an electronically isolated processor would have to be procured to process the community-wide accessible RECON data base. Such a requirement would seem appropriate since the current RECON processor in the RUFFING computer complex is electronically attached to three other mainframes that process highly sensitive technical collection materials. In addition, CIA has approached the security issue much like NSA in that it feels protection can be maintained with isolated host processors attached through "secure" communications processors. (The CIA RUFFING center is similar in capability and configuration to NSA's [redacted] 25X1A

25X1A [redacted]

- Initially, only a limited number of users would be granted access to the RECON data base (the study group estimates 20 initial users). These users should be part of the current central reference groups in each agency. They should be cleared to the TS/SI/TK/G level and it would appear appropriate that these people should be polygraphed.

- The structure of the RECON data base provides its own level of protection since it displays only a bibliographic reference to a source document.

The paucity of information in RECON (particularly English-like text) has been sighted as a major disadvantage for interactive use by intelligence analysts; however, this community-wide "limited" access to the data base can be viewed as a significant security advantage. It would allow increased community access with a minimal risk. Other systems in the community which provide English-like text of entire documents or abstracts (i.e., NSA, SOLIS and AF CIRC II) do not currently provide on-line access to highly sensitive documents (or their bibliographic references) because the envisioned security risk is too great.

9. (S) Assuming that the policy and security issues favor the use of RECON as an interim approach for the eventual development of a "distributed" community bibliographic system, certain administrative problems must still be resolved. First, CIA has indicated that it has no resources to provide community bibliographic services. CIA estimated that it would need over $10 million to provide on-line bibliographic services and off-line document storage and retrieval support for a community system. The requirement for a new electronically isolated processor and required software would cost $4.125 million according to the CIA proposal. The study group analysis has determined that a new processor, some additional required software, and initial COINS linkage could be achieved for under $3.5 million. According to the CIA proposal the balance of the $10 million cost estimate (5.875 million) would be required for additional automated document storage and retrieval equipment and for personnel expenses over a 5 year period. Approximately 35 additional personnel would be required under the CIA proposal. The study group concluded that under this interim solution CIA should need at most $215,000 for additional ADSTAR equipment and no more than 5 additional people for ADSTAR operation over the next 5 years. The total 5 year cost for a new processor, COINS communications, additional ADSTAR equipment, and 5 personnel would be just over $5 million (assuming 1979 dollars). In principle, that figure could be lowered by $1.7 million for the new processor and 4 personnel ($400,000 over five years) because the study group analysis indicates that only 15-50% of the present processor is used by RECON. The excess capacity in the new machine should be used to enhance RECON, provide additional community automatic services, or be integrated into the SAFE project. It has been suggested that this excess capacity could be used to assist in the processing of Soviet Defector and emigre reports.

10. (U) The second major administrative problem is space for the new processor. CIA says it has no additional floor space for the new system. CIA estimated that 2,500 square

feet would be required. The size of the floor space required was apparently based on RECON's current IBM 370/168 configuration. More powerful, compact, and less expensive computer equipment can be procured for the RECON system thereby reducing this space problem (i.e., an AMDAHL 470 V/6 needs only 33% of the floor space that IBM 370/168 requires, and the AMDAHL needs no plumbing for cooling purposes).

CONCLUSIONS

11. (U) General reductions in the resources required for manpower support and computing functions related to bibliographic services and document storage and retrieval could be achieved if this system were implemented. This should be the first step in a series of community-wide endeavors to improve the flow of automated intelligence support within the community.

RECOMMENDATIONS

12. (U) The basic CIA proposal for centralized bibliographic services would cost about $5 million over the next 5 years (in 1979 dollars), but it would provide an interim solution to a significant problem noted in the recent survey of intelligence production analysts. It would also highlight technical and policy problems (and provide initial solutions) that will hamper other major automated community projects now being developed. The following recommendations are made concerning the CIA proposal:

- Accept CIA's proposal to provide limited direct on-line access to the RECON bibliographic data base by intelligence analysts throughout the community via COINS.
- Give further study to the proposal to expand the scope of the current RECON system to cover gaps in existing or proposed bibliographic systems.
- Allow a limited number of users with proper clearances within each agency of the community to have total access to the full RECON bibliographic data base. These should primarily be information specialists in the central reference services of the various user agencies. Access to the full text of the document can and should be limited on the basis of need-to-know.

- Develop a plan for a total distributed community bibliographic system in which the RECON system would constitute a principal component.

- Give further study to the ways and means by which the CIA's ADSTAR system can contribute to a total community bibliographic system.

- Take action to ensure that the bibliographic index system being developed as part of the SAFE project eventually becomes an integral part of the community bibliographic system.